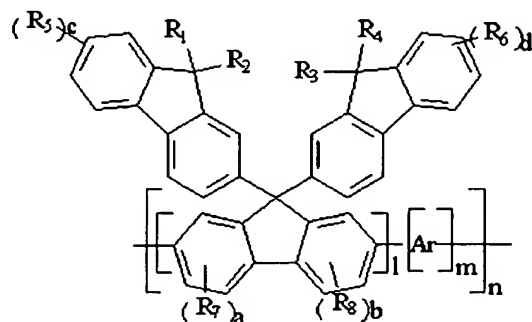


## Claims

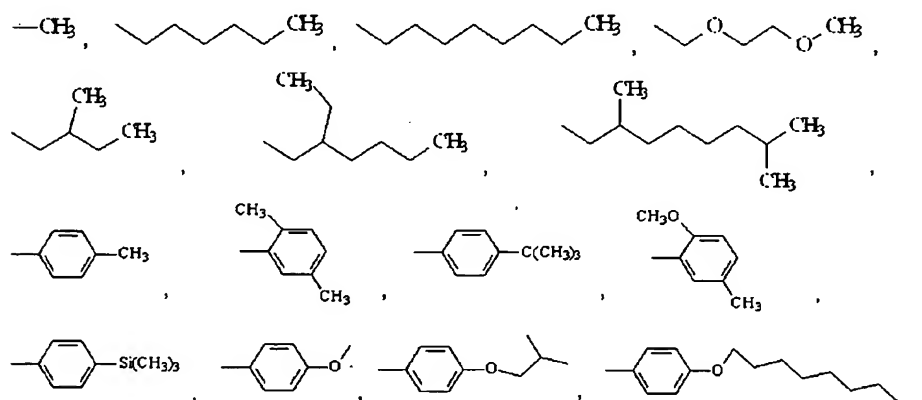
- [1] An organic electroluminescent polymer having 9,9-di(fluorenyl)-2,7-fluorenyl unit represented by the following Formula 1:

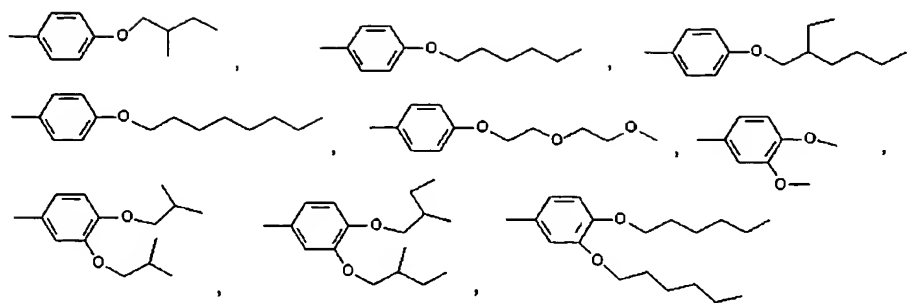
Formula 1



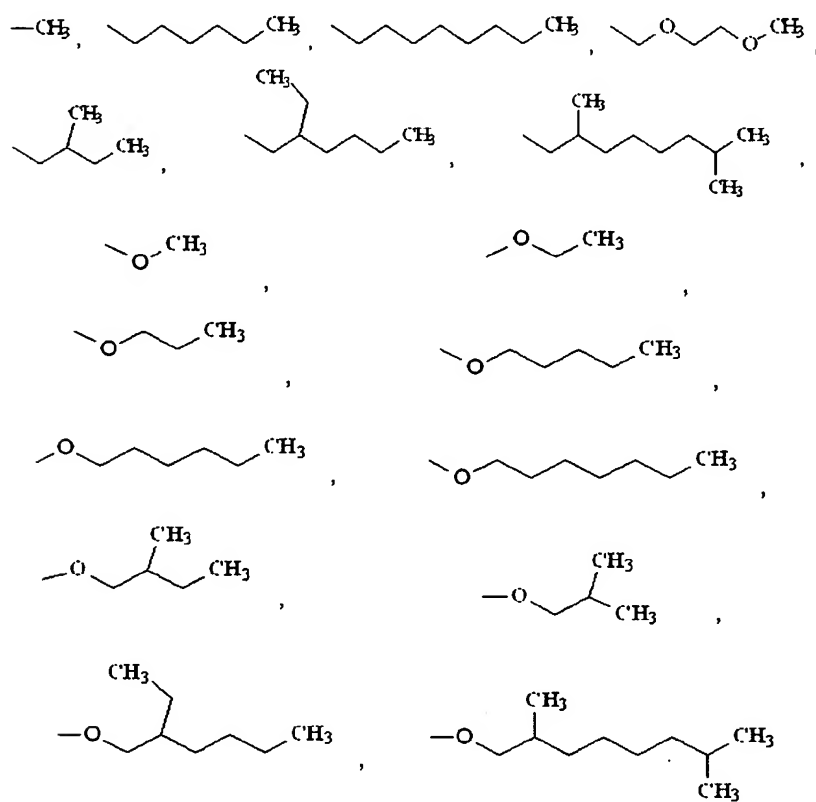
wherein,  $R_1$ ,  $R_2$ ,  $R_3$  and  $R_4$  are the same or different, each being a linear or branched alkyl group of 1-20 carbons; an aryl group which is unsubstituted or substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons; a linear or branched alkyl group of 1-20 carbons having at least one hetero-atom selected from the group consisting of F, S, N, O, P and Si; an aryl group which is substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons containing at least one hetero-atom selected from the group consisting of F, S, N, O, P and Si; an aryl group having a heterocyclic moiety of 2-24 carbons which is unsubstituted or substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons; an aryl group having a heterocyclic moiety of 2-24 carbons which is substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons containing at least one hetero-atom selected from the group consisting of F, S, N, O, P and Si; a substituted or unsubstituted trialkylsilyl group of 3-40 carbons; a substituted or unsubstituted arylsilyl group of 3-40 carbons; a substituted or unsubstituted carbazole group of 12-60 carbons; a substituted or unsubstituted phenothiazine group of 6-60 carbons; or a substituted or unsubstituted arylamine group of 6-60 carbons;  $R_5$ ,  $R_6$ ,  $R_7$  and  $R_8$  are the same or different, each being hydrogen; a linear or branched alkyl or alkoxy group of 1-20 carbons; an aryl group which is unsubstituted or substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons; a linear or branched alkyl or alkoxy group of 1-20 carbons having at least one

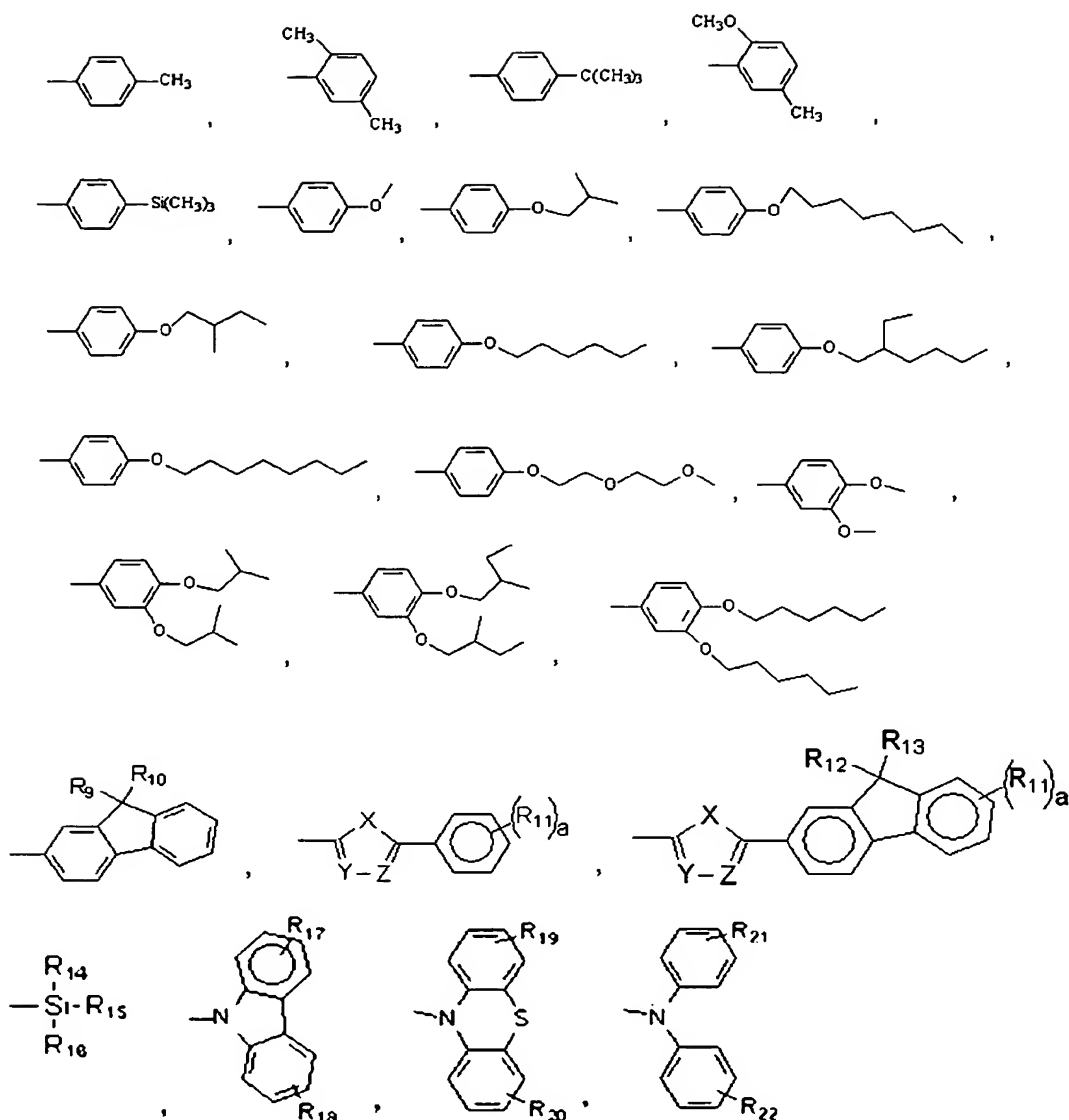
[2] The organic electroluminescent polymer as set forth in claim 1, wherein said R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub>, respectively are selected from the following group:





- [3] The organic electroluminescent polymer as set forth in claim 1, wherein said  $R_5$  and  $R_6$ , respectively are selected from the following group:  
H,





wherein,  $R_9$  and  $R_{10}$  are the same or different, and respectively are a linear or branched alkyl group of 1-20 carbons;

$R_{11}$  is hydrogen or a linear or branched alkyl, alkoxy or trialkylsilyl group of 1-20 carbons;

$R_{12}$  and  $R_{13}$  are the same or different, and respectively are a linear or branched alkyl group of 1-20 carbons;

$R_{14}$ ,  $R_{15}$  and  $R_{16}$  are the same or different, and respectively are a linear or branched alkyl or alkoxy group of 1-20 carbons; or an aryl group which is unsubstituted or substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons;

$R_{17}$ ,  $R_{18}$ ,  $R_{19}$ ,  $R_{20}$ ,  $R_{21}$  and  $R_{22}$  are the same or different, and respectively are hydrogen; a linear or branched alkyl or alkoxy group of 1-20 carbons; or an aryl

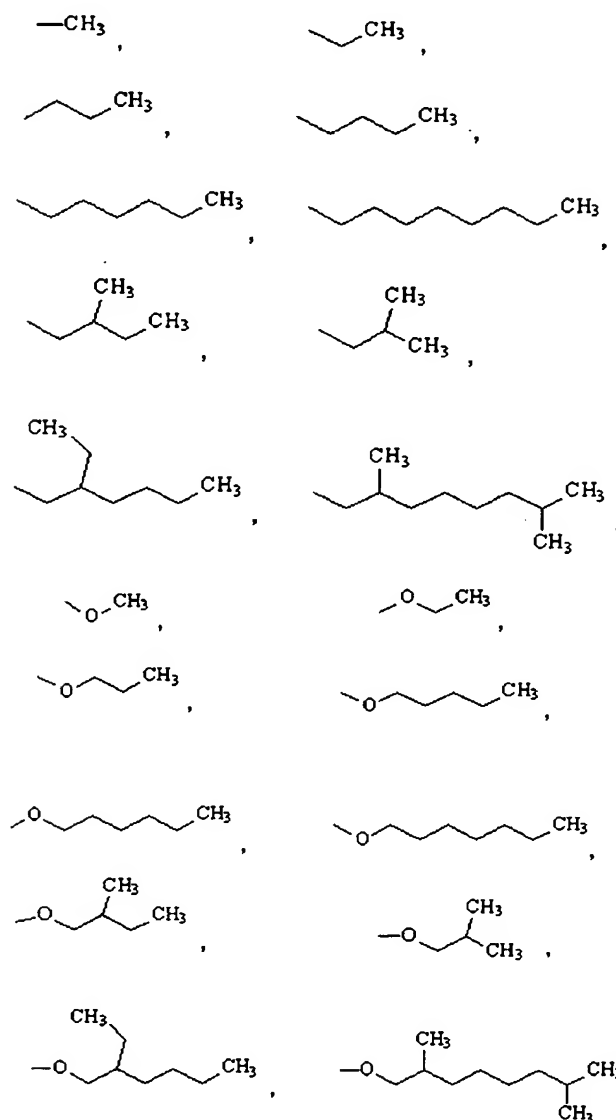
group which is unsubstituted or substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons;

X is O or S;

Y and Z are N; and

a is an integer of 1-3.

- [4] The organic electroluminescent polymer as set forth in claim 1, wherein said  $R_7$  and  $R_8$ , respectively are selected from the following group:  
H,



- [5] The organic electroluminescent polymer as set forth in claim 1, wherein said Ar is selected from the following group:  
(i) a substituted or unsubstituted arylene group of 6-60 carbons;

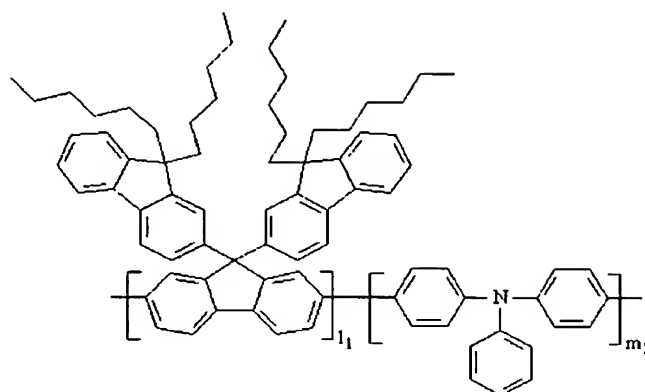
[6] The organic electroluminescent polymer as set forth in claim 1, wherein a ratio of l:m ranges from 5:95 to 95:5.

[8] The organic electroluminescent polymer as set forth in claim 1, wherein the organic electroluminescent polymer has the following Formula 2:

The chemical structure shows a dendritic polymer. At the bottom, there is a repeating unit of a poly(phenylene) backbone, represented by two benzene rings connected by a single bond, enclosed in brackets with a subscript  $n_1$ . Above this backbone, there are two dendritic branches. Each branch consists of a central carbon atom bonded to three phenyl rings. One of these phenyl rings is further substituted with a long, branched alkyl chain. The overall structure is symmetrical and represents a dendritic polymer with a poly(phenylene) backbone.

[9] The organic electroluminescent polymer as set forth in claim 1, wherein the organic electroluminescent polymer has the following Formula 3:

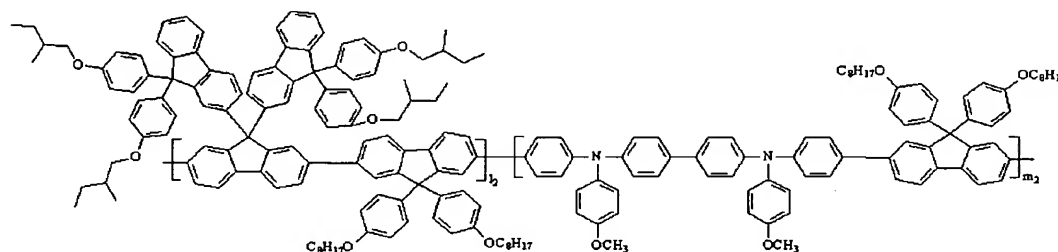
### Formula 3



wherein,  $l_1$  is an integer from 1 to 100,000, and  $m_1$  is an integer from 1 to 100,000.

- [10] The organic electroluminescent polymer as set forth in claim 1, wherein the organic electroluminescent polymer has the following Formula 4:

Formula 4



wherein,  $l_2$  is an integer from 1 to 100,000, and  $m_2$  is an integer from 1 to 100,000.

- [11] An organic electroluminescent device having at least one layer comprising the polymer according to claim 1 between an anode and a cathode, wherein, the layer is a hole-transport layer, a light emitting layer, an electron-transport layer or a hole blocking layer.
- [12] The organic electroluminescent device as set forth in claim 11, wherein the electroluminescent device comprises a structure of anode/light emitting layer/cathode, anode/hole transport layer/light emitting layer/cathode, or anode/hole transport layer/light emitting layer/electron transport layer/cathode.